CLAIMS

We claim:

1. In an open system, a data health monitor for detecting and identifying non-current financial data transmitted via a communications network, comprising:

a processor for receiving current financial data, formatting said current financial data to include an identifier, and transmitting said formatted current financial data onto the communications network;

a status code generator for generating and transmitting a data source status code based upon the operating status of said data source, said data source status code including the data source identifier, said status code generator automatically updating said data source status code in response to changes in the operating status of said data source and automatically transmitting said updated data source status code; and

a client site terminal for receiving and processing said formatted real-time financial data, said data source status code and said updated data source status code, said client site terminal selecting in real time a stale or real-time display mode for said formatted real-time financial data based upon said data source identifier of said formatted real-time financial data, said data source status code and said updated data source status code, and displaying said formatted real-time financial data in accordance with the selected display mode.

Banner & Witcoff, Ltd.
1001 G Street, N.W.
Suite 1100
Washington, D.C. 20001

2. A data health monitor according to claim 1, wherein said client site terminal compares the data source identifier of said formatted real-time financial data with the data source identifier of the data source status code and displays the formatted real-time financial data accordance with the status indicated in the data source status code when said system identifiers match.

3. A data health monitor according to claim 1, wherein said client site terminal automatically alters the display mode of said formatted real-time financial data upon receipt of an updated data source status code having a data source identifier matching that of said formatted real-time financial data in accordance with the operating status indicated in the received updated data source status code.

4. A data health monitor for detecting and identifying non-current financial data transmitted via a communications network, comprising:

a processor for receiving real-time financial data from a data source, formatting said real-time financial data to include a data source identifier, and transmitting said formatted real-time financial data onto the communications network;

a status code generator for generating and transmitting a data source status code based upon the operating status of said data source, said data source status code including the data source identifier, said status code generator automatically updating said data source status code in response to changes in the operating status of said data source and automatically transmitting said updated data source status code; and

Banner & Witcoff, Ltd.
1001 G Street, N.W.
Suite 1100
Washington, D.C. 20001

a client site terminal for receiving and processing said formatted real-time financial data, said data source status code and said updated data source status code, said client site terminal selecting in real time a stale or real-time display mode for said formatted real-time financial data based upon said data source identifier of said formatted real-time financial data, said data source status code and said updated data source status code, and displaying said formatted real-time financial data in accordance with the selected display mode.

5. A data health monitor according to claim 4, wherein said client site terminal compares the data source identifier of said formatted real-time financial data with the data source identifier of the data source status code and displays the formatted real-time financial data accordance with the status indicated in the data source status code when said system identifiers match.

6. A data health monitor according to claim 4, wherein said client site terminal automatically alters the display mode of said formatted real-time financial data upon receipt of an updated data source status code having a data source identifier matching that of said formatted real-time financial data in accordance with the operating status indicated in the received updated data source status code.

7. A data health monitor for detecting and identifying non-current financial data transmitted via a communications network, comprising:

Banner & Witcoff, Ltd.
1001 G Street, N.W.
Suite 1100
Washington, D.C. 20001

a processor for receiving real-time financial data from a data source, formatting said real-time financial data to include a data source identifier, and transmitting said formatted real-time financial data onto the communications network;

a status code generator for generating and transmitting a data source status code based upon the operating status of said data source, said data source status code including the data source identifier, said status code generator automatically updating said data source status code in response to changes in the operating status of said data source and automatically transmitting said updated data source status code; and

a client site terminal for receiving and processing said formatted real-time financial data, said data source status code and said updated data source status code, said client site terminal selecting in real time a stale or real-time display mode for said formatted real-time financial data based upon said data source identifier of said formatted real-time financial data, said data source status code and said updated data source status code, and displaying said formatted real-time financial data in accordance with the selected display mode.

8. A data health monitor according to claim 7, wherein said client site terminal compares the data source identifier of said formatted real-time financial data with the data source identifier of the data source status code and displays the formatted real-time financial data accordance with the status indicated in the data source status code when said system identifiers match.

Banner & Witcoff, Ltd.
1001 G Street, N.W.
Suite 1100
Washington, D.C. 20001

9. A data health monitor according to claim 7, wherein said client site terminal automatically alters the display mode of said formatted real-time financial data upon receipt of an updated data source status code having a data source identifier matching that of said formatted real-time financial data in accordance with the operating status indicated in the received updated data source status code.

10. A data health monitor for detecting and identifying non-current financial data transmitted via a communications network, comprising:

a processor for receiving real-time financial data from a data source, formatting said real-time financial data to include a system identifier, and transmitting said formatted real-time financial data onto the communications network;

a heartbeat signal generator for generating and transmitting at a predetermined interval a heartbeat signal including said system identifier; and

a client site terminal for receiving and processing said formatted real-time financial data and said heartbeat signal, said client site terminal selecting in real time a stale or real-time display mode for said formatted real-time financial data based upon said system identifier of said formatted real-time financial data and said heartbeat signal and displaying said formatted real-time financial data in accordance with the selected display mode.

11. A data health monitor according to claim 10, wherein, when said client site terminal does not receive said heartbeat signal within a predetermined period of time, said client site terminal compares the system identifier of said formatted real-time financial data with the

system identifier of the heartbeat signal not received and displays the formatted real-time financial data in the stale display mode when said system identifiers match.

12. A financial communications network including a data health monitor, comprising:

a plurality of data sources;

a plurality of data collection system, each including

a processor for receiving and formatting financial data received from said data sources, said formatted financial data having a data field including a first data source identifier identifying the data source of said formatted financial data and a first system identifier identifying the data collection system formatting said formatted financial data, said processor transmitting said formatted financial data;

a status code generator for generating and transmitting a status code including a status message and a second data source identifier identifying the data source to which the status message corresponds, said status code generator automatically updating said status code when the operating status of a corresponding one of said plurality of data sources changes and transmitting said updated status code;

a heartbeat signal generator for generating and periodically transmitting a heartbeat signal including a second system identifier identifying the data collection system generating the heartbeat signal;

a client site terminal, including

Banner & Witcoff, Ltd.
1001 G Street, N.W.
Suite 1100
Washington, D.C. 20001

a processor for receiving said formatted financial data, said heartbeat signal, said status codes and said status code updates, and extracting said first and second system identifiers and said first and second data source identifiers;

a first display mode selector circuit for comparing said second data source identifier from said status code with said first data source identifier from said formatted financial data and selecting a real-time or stale display mode for displaying said financial data in accordance with the status message from said status code when said first and second data source identifiers match, said first display mode selector changing said selected display mode upon receipt of said updated status code from said data collection system in accordance with the status message from said updated status code;

a heartbeat detector circuit for detecting receipt of said heartbeat signals from said data collection systems and generating a control signal if a heartbeat signal is not received from a data collection system within a predetermined period of time;

a second display mode selector circuit responsive to the control signal from said heartbeat detector circuit for comparing said second system identifier from said non-received heartbeat signal with said first system identifier from said financial data and selecting a stale display mode for displaying said financial data when said first and second system identifiers match; and

a display for displaying said financial data in accordance with the selected display modes selected by said first and second display mode selector circuits; and

Banner & Witcoff, Ltd.
1001 G Street, N.W.
Suite 1100
Washington, D.C. 20001

a network for enabling communication between said plurality of data sources, said plurality of data collection systems and said client site terminal.

13. A method of detecting and identifying non-current financial data transmitted through a communications network, comprising the steps of:

receiving financial data from a data source at a data collection system;

formatting the financial data received from the data source to include a data source identifier corresponding to the data source;

generating a data source status signal including the data source identifier, said data source status signal determined by operation of said data source;

transmitting the formatted financial data and the data source status signal;

receiving the requested financial data and the data source status signal at a client site terminal;

extracting the data source identifier from the received real-time financial data;

comparing the extracted data source identifier with stored status data to select a real-time display mode or stale display mode for said received financial data, said stored status data being derived from the data source status signal; and

displaying the received financial data in accordance with the selected display mode.

14. A method of detecting and identifying non-current financial data transmitted through a communications network, comprising the steps of:

Banner & Witcoff, Ltd.
1001 G Street, N.W.
Suite 1100
Washington, D.C. 20001

receiving financial data from a data source at a data collection system;

formatting the financial data received from the data source to include a system identifier corresponding to the data collection system;

generating a heartbeat signal including the system identifier;

transmitting the formatted financial data to one or more client site terminals upon receiving corresponding requests from the client site terminals;

transmitting the heartbeat signal at a predetermined interval to the one or more client site terminals;

receiving the requested financial data and the heartbeat signal at the client site terminal;

extracting the system identifier from the received financial data;

comparing the extracted system identifier with stored status data to select a real-time or stale display mode for said received financial data, said stored status data being based upon whether the client site terminal has received the heartbeat signal within a predetermined period of time; and

displaying the real-time financial data in accordance with the selected display mode.

15. A process of alerting a user to the existence of non-current information including the steps of:

receiving, at a user's computer, information from a remote source;

receiving, at said user's computer, data which describes the information as being real-time or not real-time;

Banner & Witcoff, Ltd.
1001 G Street, N.W.
Suite 1100
Washington, D.C. 20001

porting the information to an application at said user's computer;

monitoring the data at said user's computer;

indicating the status of the information as being real-time or not real-time in said application at said user's computer.

Banner & Witcoff, Ltd.
1001 G Street, N.W.
Suite 1100
Washington, D.C. 20001